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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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THE EFFECT OF DIFFERENT FITNESS TRAINING PROGRAMS AND FREQUENCY ON HEALTH-RELATED QUALITY OF LIFE

Arpine Muradyan.

Chair of Physical Rehabilitation, Armenian State Institute of Physical Culture and Sport, Armenia.

Abstract.

Physical and mental health play an important role in managing and characterizing a person's quality of life (QOL) and physical activity is proposed as one of the ways to improve QOL and well-being. This study aimed to quantify the effect of different fitness training programs and frequency on health-related quality of life (HRQOL). The percentage of participants with high levels of fitness is higher among men than women. There is an association between the level of PF activity and age. As expected, PF activity is lower in the elderly compared to the younger and middle-aged participants. From the HRQOL domains, low general health and mental health scores. High and medium-frequency training can presumably help improve the total quality of life scores, as well as scores for Physical and Mental components, significantly affecting domains PF, GH, VT, RE and MH. To improve the SF domain, high-frequency training is preferable. These results can become important for the implementation of programs aimed at improving the HRQOL of the population.

Key words. Fitness, training frequency, resistance training, aerobic training, Body & Mind training, HRQOL.

Introduction.

Health-related quality of life (HRQOL) is a multidimensional concept that encompasses information about individuals' physical and mental health status and is commonly used to study the impact of health status on quality of life [1,2]. The important role played by physical fitness (PF) and self-efficacy for physical exercise in achieving levels of well-being and quality of life in many, including middle-aged, adults and senior adults [3,4]. Ramirez-Vélez et al., review study indicated that moderate and systematic physical activity is one of the factors that most influences quality of life [5].

Therefore, a minimal level of physical activity is promoted by many international and national organizations to maintain the health and functional capacity of societies [6]. The best known and documented are the Global Recommendations on Physical Activity for Health developed by the World Health Organization (WHO) [7]. WHO Global Action Plan on Physical Activity 2018-2030: More Active People for a Healthier World is the basis for effective and feasible policy actions aimed at encouraging, maintaining and increasing physical activity through intergovernmental and multisectoral [8]. Studies have found improvements in both motor and cognitive function, mainly with interventions involving physical and cognitive training or combined exercise training [9]. Findings from original research, systematic reviews, and meta-analyses have demonstrated the effectiveness of resistance training (RT) on markers of health [10]. Evidence reveals that RT can effectively improve most domains of quality of life in young adults [11] and aged people [12]. As several studies show, aerobic training also has a positive effect on HRQOL [13-15]. The research found that aerobic, resistance, or combination exercise training improves several components of self-rated HRQOL, including physical function, appearance, and mental well-being [16-18]. Participation in both aerobic and resistance training is associated with decreased all-cause mortality [19]. In addition to resistance and aerobic training Body–mind–spirit intervention is also related to improvements in well-being and affects improving HRQOL [20,21].

One of the widespread, reliable and valid instruments that is used to measure HRQOL is the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) eight scales: physical functioning (PF), role physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role emotional (RE), and mental health (MH) [22].

The main **purpose** of the current study was to quantify the effect of different fitness training programs and frequency on health-related quality of life (HRQOL).

Materials and Methods.

A gross-sectional study with a sample of 400 study participants, with a mean age of 38.60 (SD= 16.79) was studied. Two third of them (69.3%) were female. More than half (65.5%) were in the age group under 44. All participants were divided into three groups based on the frequency of regular fitness (resistance, aerobic, Body & Mind) training over the past 2 months: high (3 weekly sets, n=106), moderate (2 weekly sets, n=167) and low (1 weekly set, n=127). According to the analysis of variance, there were no statistically significant differences between the data groups according to gender, age and physical fitness.

The survey to determine the group of participants was conducted in accordance with the training protocol shown in Figure 1. In our study, the inclusion criteria for participation were age ≥18, performed moderate-intensity fitness workouts regularly over the last two months (all sessions only with supervision by trained personnel), and complied with the training protocol. The exclusion criteria were missing training for more than 10 days and non-compliance with the training protocol.

The Short-Form Health Survey (SF-36) was used to measure the quality of life on eight scales: physical functioning (PF), role physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role emotional (RE) and mental health (MH). According to component analysis, there are two different concepts measured by SF-36: the physical dimension represented by the summary of Physical Components (PCS) and the mental dimension represented by the summary of mental Components (MCS). Statistical analysis of the study was carried out using the statistical package SPSS 19.0. The method of statistical inference for quantitative variables was the

chi-square test with post hoc testing. As the values for scores of all domains of the SF-36 questionnaire had an asymmetric distribution in each of the three compared groups of the study participants by level of physical activity, the Kruskal-Wallis test was performed for comparisons. A post-hoc test was performed to determine which specific group means are significantly different from each other.

Results.

The distribution of the study participants by level of training frequency depending on gender is presented in Table 1. There was a statistically significant association between gender and level of physical activity. The performed a chi-square post-hoc test showed that the percentage of participants with high level of physical activity was significantly higher among men than women (p=0.005).

Table 1. *Distribution of the study participants by training frequency and gender.*

Variables				
Gender	**Low N (%)**	**Moderate N (%)**	**High N (%)**	**X2, p-value**
Female	89 (32.1)	126 (45.5)	62 (22.4)	9.241, p= 0.026
Male	38 (30.9)	41 (33.3)	44 (35.8)	

There was a statistically significant association between physical fitness frequency (PFF) of the study participants and their age (see Table 2). Results of the chi-square post-hoc test revealed a statistically higher percentage of participants with low physical activity among elderly persons compared to young (p<0.001) and elderly persons compared to middle-aged (p<0.001).

Table 2. *Distribution of the study participants by training frequency and age.*

Age	**Physical activity**			
	Low N (%)	**Moderate N (%)**	**High N (%)**	**X2, p-value**
Young (<44)	59 (22.5)	113 (43.1)	90 (34.4)	53.427, p<0.001
Middle age (44-59)	28 (35.9)	38 (48.7)	12 (15.4)	
Elderly (≥ 60)	40 (66.7)	16 (26.7)	4 (6.6)	

The mean score of the quality of life in the whole sample was 47.35 (5.17). Descriptive statistics for 8 scales of the SF-36 tool, as well as the Physical and Mental components of health are presented in Table 3. As shown in the table, the highest were the scores for Physical functioning (81.68±24.41) and Bodily pain (80.39±23.62), the lowest - for Mental health (56.63±11.80) and General health (54.03±14.18). The scores for Physical and Mental components of health were 49.64±7.24 and 45.07±5.52, respectively.

The performed Kruskal-Wallis test and post-hoc test revealed statistically significant differences between the total quality of life scores, as well as scores for the Physical component of QOL in all three compared groups of PFF. As shown in Table 4 scores were higher in the study participants with high and moderate levels. The scores of the Mental component of QOL were significantly different only between the groups with high and low (p=0.001), and moderate and low physical activity (p=0.014).

The Kruskal-Wallis test used for the comparison of scores for all 8 domains of the SF-39 questionnaire revealed significant differences for all eight domains (see Table 5).

The post-hoc test showed a difference between all three groups of PFF for such domains, as PF (p<0.001 in all comparisons), and BP (p<0.05 in all comparisons). There was a significant difference only between the groups of high and low, moderate and low PF frequency for domains RE (p<0.001 in both comparisons), GH (p<0.001 in both comparisons), VT (p<0.001 in both comparisons), RE (p<0.05 in both comparisons) and MH (p<0.05 in both comparisons). A significantly higher score for SF was registered only in the group of participants with high frequency compared to those who had low frequency (p=0.002).

Discussion.

Within the framework of this study, a comparative assessment of the influence of different specific fitness programs and frequency on quality-of-life parameters was carried out. Most previous studies have assessed physical fitness only using specific types of training programs, such as aerobic, resistance, functional, training, etc. [23-25]. Studies needed to examine the use of different programs and different frequencies of application (such as combining training 3 times a week (e.g., aerobic, resistance and Body & Mind), 2 times a week (e.g., aerobic/resistance and Body & Mind) or only one specific training once a week (e.g., only aerobic, resistance or Body & Mind), and a comparative assessment on the impact of quality of life indicators.

The main finding of this study was that high and medium-frequency fitness training can improve total HRQOL scores, and scores for Physical and Mental components. This finding agrees with the results of previous studies that observed associations between physical HRQOL dimensions and PF and also observed a slight association between mental health-related HRQOL dimensions and PF [26-28].

Several studies on the benefits of physical activity in HRQOL have shown that an increased PFF improves HRQOL [29-31]. The high-frequency activity of mild intensity has the strongest influence on QOL reports [32]. Exercise intervention at a frequency of three times per week is more effective in improving mental component summary due to a larger effect size obtained compared to the exercise frequency of twice per week [33]. We also expected higher HRQOL scores among high-frequency fitness participants, primarily in the core physical activity-related quality of life domains. The hypothesis was confirmed by the results, which showed that high- and moderate-frequency fitness training significantly affected on the domains RE, GH, VT, RE and MH. Studies indicate that high-frequency activity performed to improve health and fitness has the strongest influence on QOL reports [32,34]. The weekly time spent doing physical activity practice showed a positive association with VT [35]. People who train at a frequency of four times or more per week may present better general QOL in the physical domain compared to people with less weekly training frequency [36].

The present study showed, that to improve the SF domain,

Table 3. *Descriptive statistics for SF-36 scales.*

	PF	RF	BP	GH	VT	SF	RE	MH	PCH	MCH
Mean	81.68	76.12	80.39	54.03	61.76	80.73	78.90	56.63	49.64	45.07
Standard Deviation	24.41	29.43	23.62	14.18	16.30	19.31	28.62	11.80	7.27	5.52
Median	90.00	100.00	90.00	50.00	65.00	87.50	100.00	56.00	52.30	45.19

Table 4. *Comparison of scores of total QOL and Physical and Mental components of QOL depending on the participants physical activity.*

Variables	**Total QOL scores**		**QOL scores Physical component**		**QOL scores Mental component**	
	X(SD)	**Statistics,p-value**	**X(SD)**	**Statistics, p-value**	**X(SD)**	**Statistics, p-value**
Physical fitness frequency						
High	49.39(4.54)	H=34.536, p<0.001	52.46(6.34)	H=37.503, p<0.001	46.32(5.57)	H=14.700, P=0.001
Moderate	47.59(4.75)		49.78(6.30)		45.41(5.73)	
Low	44.98(5.43)		46.64(8.30)		43.32(4.73)	

Table 5. *Impact of physical activity of the study participants on Physical and Mental component scores.*

Variables	**Quality of life domains**							
	1. PHYSICAL COMPONENTS							
	PF		**RP**		**BP**		**GH**	
	X(SD)	Statistics,p-value	X(SD)	Statistics, p-value	X(SD)	Statistics, p-value	X(SD)	Statistics, p-value
Physical fitness frequency								
High	90.44(19.27)	H=45.751, p<0.001	81.99(27.00)	H=21.256, p<0.001	87.31(21.57)	H=26.797, P<0.001	58.42(13.83)	H=50.385, p<0.001
Moderate	84.89(19.19)		80.91(25.81)		82.10(21.18)		56.56(13.33)	
Low	70.24(29.69)		63.94(33.02)		72.37(26.04)		47.05(13.01)	
	2. MENTAL COMPONENTS							
	VT		**SF**		**RE**		**MH**	
	X(SD)	Statistics,p-value	X(SD)	Statistics, p-value	X(SD)	Statistics, p-value	M±m	Statistics, p-value
Physical fitness frequency								
High	66.84(17.64)	H=32.814, p<0.001	85.49(16.20)	H=11.642, p=0.003	84.47(26.74)	H=17.987, p<0.001	60.02(12.40)	H=23.811, p<0.001
Moderate	63.62(14.28)		81.11(19.27)		82.03(26.08)		57.63(10.93)	
Low	55.06(15.57)		76.28(20.83)		68.81(31.58)		52.47(11.28)	

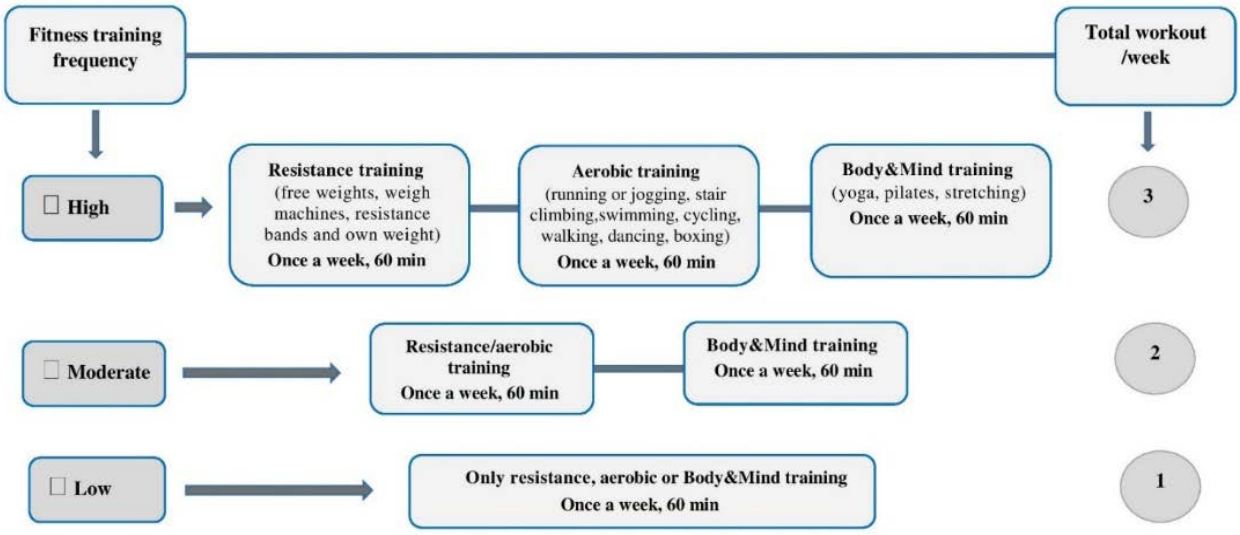

Figure 1. *Fitness training protocol (for the last two months).*

high-frequency training is preferable. Some studies indicate that physical activity is globally associated with a better QOL in the mental domains with a longitudinal approach [37,38], while others have not recorded trends in were not significantly related to the Mental Component Summary score, including SF domain improvement [39,40]. Thus, the results of changes in the SF domain when using physical activity programs are not unambiguous.

Conclusion.

Thus, we conclude, that the percentage of participants with high levels of fitness is higher among men than women. There is an association between the level of PF activity and age. As expected, PF activity is lower in the elderly compared to the younger and middle-aged participants. High and medium-frequency training can presumably help improve the total quality of life scores, and scores for Physical and Mental components, significantly affecting domains PF, GH, VT, RE and MH. To improve the SF domain, high-frequency training is preferable. These results can become important for the implementation of programs aimed at improving the HRQOL of the population.

Conflict of interest.

The authors declare that there is no conflict of interest.

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